In this talk we explore the following: What is the probability that a random element of a Coxeter group has a given peak set? This question was first explored in type A Coxeter groups by Billey, Burdzy, Pal, and Sagan in 2013. In 2014 Castro-Velez, Diaz-Lopez, Orellana, Pastrana, and Zevallos answered this question in type $B_n$. Using Pascal’s triangle and a partition of $S_n$, we generalize the previous results and to answer this question in the Coxeter groups of types $B_n$ and $D_n$. (Received September 13, 2014)